

INTERNATIONAL SEARCH REPORT

10/541289
Rec'd PCT/PTO 30 JUN 2005
International Application No
/CA 03/02029

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 F28D7/16 F28F9/02 B01J8/04 B01J8/00 B01J8/02
C01B3/38 C01B3/48

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 F28D F28F B01J C01B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EP0-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P,X	WO 03/080230 A (ATOBE HITOSHI ; HOTTA MASATOSHI (JP); SHOWA DENKO KK (JP)) 2 October 2003 (2003-10-02)	1,3,4, 8-12,16, 19,22, 25,26, 31,32, 36,37 5-7,35, 39,71
P,A	figure 1	
A	FR 1 274 228 A (CHEMIE LINZ AG) 20 October 1961 (1961-10-20)	1,8-15, 19,22, 25,26, 29,31, 32, 35-37,71
	figures	
	----- -/--	

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

26 April 2004

Date of mailing of the international search report

06/05/2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Van Belleghem, W

INTERNATIONAL SEARCH REPORT

International Application No
T/CA 03/02029

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	FR 1 480 125 A (CHEMICAL CONSTRUCTION CORP) 12 May 1967 (1967-05-12) page 1, left-hand column, paragraph 1; figure 1	1,8-15, 19,22, 25-29, 31,36, 37, 42-54, 59,71
A	US 4 942 022 A (KASAI HIROSHI ET AL) 17 July 1990 (1990-07-17) figure 2	38
A	EP 1 094 030 A (NIPPON CHEM PLANT CONSULTANT) 25 April 2001 (2001-04-25) column 3, paragraph 13 - column 7, paragraph 33; figure 1	8-15, 26-30, 39-54, 57,59, 63-67,69
A	GB 1 387 044 A (CHEMIE LINZ AG) 12 March 1975 (1975-03-12) figure	1
A	DE 23 41 808 A (FBM COST MECC SPA) 2 January 1975 (1975-01-02) figures	1,5,19, 20,22, 31,33, 36,70,71

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

CA 03/02029

Patent document • cited in search report		Publication date	Patent family member(s)	Publication date
WO 03080230	A	02-10-2003	WO 03080230 A1 JP 2004000920 A	02-10-2003 08-01-2004
FR 1274228	A	20-10-1961	BE 597362 A DE 1542278 A1 DE 1142586 B NL 122998 C NL 257966 A	06-08-1970
FR 1480125	A	12-05-1967	US 3366461 A BE 663562 A DE 1542034 A1 DK 117344 B GB 1065044 A IL 23418 A NL 6505748 A NO 116715 B	30-01-1968 08-11-1965 16-04-1970 20-04-1970 12-04-1967 25-06-1969 12-11-1965 12-05-1969
US 4942022	A	17-07-1990	JP 63283741 A CN 1030027 A ,B DD 269792 A5 IN 168953 A1	21-11-1988 04-01-1989 12-07-1989 27-07-1991
EP 1094030	A	25-04-2001	JP 2001192201 A CA 2323728 A1 EP 1094030 A2 US 2003041519 A1 US 6506359 B1 CA 2400050 A1 EP 1281667 A1 WO 0164577 A1 US 2003074839 A1	17-07-2001 20-04-2001 25-04-2001 06-03-2003 14-01-2003 07-09-2001 05-02-2003 07-09-2001 24-04-2003
GB 1387044	A	12-03-1975	AT 306745 B BE 783830 A1 DE 2126211 B1 DK 150712 B FR 2138701 A1 IT 958951 B JP 48048384 A JP 54036595 B NL 7205262 A ,C	25-04-1973 23-11-1972 21-09-1972 01-06-1987 05-01-1973 30-10-1973 09-07-1973 09-11-1979 28-11-1972
DE 2341808	A	02-01-1975	IT 988745 B DE 2341808 A1	30-04-1975 02-01-1975



(84) **Designated States (regional):** ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

— *with international search report*